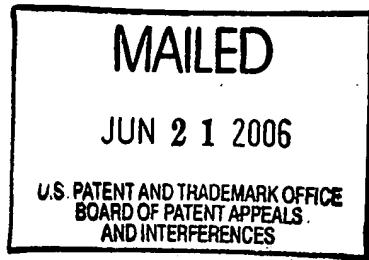


The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE



BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte DONALD R. HUFFMAN  
and WOLFGANG KRATSCHMER

Appeal No. 2002-1077  
Application No. 08/236,933

ON BRIEF

Before KIMLIN, GARRIS and HANLON, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON REHEARING

In a decision mailed on March 30, 2005, a panel of the board reversed the final rejection of claims 83, 84 and 222 under 35 U.S.C. § 112, second paragraph, and affirmed the final rejections of claims 45-49, 51-82, 96, 203 and 232 under 35 U.S.C. § 112, first paragraph, based on written description and enablement. The appellants filed a request for rehearing on May 31, 2005, requesting reconsideration of that portion of the decision affirming the rejections under 35 U.S.C. § 112, first paragraph. Appellants also request clarification of the status of claims 45-49, 51-82, 84, 96, 181, 203-221 and 223-248 with respect to the rejection under 35 U.S.C. § 112, second paragraph. See Request at 1.

The panel has carefully reconsidered its decision in light of the arguments presented in the request for rehearing, and it finds no error therein. Therefore, the panel declines to make any changes in the prior decision for the reasons which follow.

I.

With respect to the rejection based on written description, the appellants argue that the board overlooked evidence in the instant application that conveyed to one of ordinary skill in the art that, at the time of filing, the inventors had possession of a process for making macroscopic amounts of C<sub>60</sub>.<sup>1</sup> Specifically, the appellants direct the panel's attention to paragraph 3 of a Kroto Declaration dated July 27, 1995, and paragraphs 11, 17 and 18 of a Loutfy Declaration dated July 16, 2002. See Request at 8 and 10-12. The appellants also argue that a 1990 Nature article by Kratschmer, U.S. Patent No. 6,077,401, and a press release by the Swedish Academy are additional evidence that the appellants' process was known to have produced macroscopic amounts of C<sub>60</sub>. Request at 15. The appellants did not rely on this evidence in the appeal brief.<sup>2</sup>

Furthermore, in the request for rehearing, the appellants raise new arguments and rely on additional evidence that was not discussed in the appeal brief. Specifically, relying on paragraph 15 of the Loutfy Declaration dated July 16, 2002, and page 4, lines 1-6 of the specification, the appellants argue that one of ordinary skill in the art would have understood that by forming a high density of carbon vapor, the appellants were able to produce macroscopic amounts of C<sub>60</sub>.

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<sup>1</sup> The appellants agree with the panel that "macroscopic" amounts of C<sub>60</sub> are amounts of C<sub>60</sub> "sufficient to be seen with the naked eye without the aid of a microscope." See Request at 2.

<sup>2</sup> The appellants did not file a reply brief.

See Request at 6-7. The appellants also argue that in the context of the “proposed uses” described in a 1985 Nature article, one of ordinary skill in the art would have understood that the phrase “recoverable amounts” (as well as “appreciable amounts” and “measurable amounts”) connotes macroscopic amounts. See Request at 3-5.

Clearly, this panel could not have overlooked what was not before it. See Keebler Co. v. Murray Bakery Prods., 866 F.2d 1386, 1388, 9 USPQ2d 1736, 1738 (Fed. Cir. 1989) (“Prescience is not a required characteristic of the board.”). Furthermore, as provided in 37 CFR § 41.52(a)(1) (2005) (effective September 13, 2004):

Arguments not raised in the briefs before the Board and evidence not previously relied upon in the brief and any reply brief(s) are not permitted in the request for rehearing except as permitted by paragraphs (a)(2) and (a)(3) of this section.

Paragraphs (a)(2) and (a)(3) of 37 CFR § 41.52 do not apply in this case. Therefore, according to 37 CFR § 41.52(a)(1) (2005), appellants’ newly presented evidence and arguments are not entitled to consideration on rehearing. See also Moller v. Harding, 214 USPQ 730, 731 (Bd. Pat. Int. 1982), aff’d mem., 714 F.2d 160 (Fed. Cir. 1983) (“a party cannot wait until after the board has rendered a decision against him and then present new contentions in a request for reconsideration”); Orenick v. Shield, 144 USPQ 277, 278 (Comm’r Pats. 1953) (it is improper for a party to withhold its arguments until after the board has rendered a decision and then present its contentions in a request for reconsideration).

The appellants also rely on paragraphs 3, 14 and 15 of a Kroto Declaration dated June 9, 1995, as further evidence that the disclosure of the instant application reasonably conveys that

the inventors had possession of a process for producing macroscopic amounts of C<sub>60</sub> at the time the application was filed. Request at 8-9.

Significantly, a request for rehearing is entitled to consideration only to the extent it specifies with particularity the points believed to have been misapprehended or overlooked in rendering the final decision. See 37 CFR § 41.52(a)(1) (2005). The appellants have failed to explain how the panel misapprehended the testimony of Dr. Kroto in rendering the final decision. See Decision at 13-14. Therefore, this evidence is not entitled to reconsideration on rehearing.

Next, the appellants argue that the colored benzene solution described on page 6, line 11 to page 7, line 12 and in Example 1 on page 16 of the specification is evidence that macroscopic amounts of C<sub>60</sub> were produced. For support, the appellants rely on pages 55 and 57 of a 1991 article by Curl et al. in Scientific American. Request at 5-6.

In its brief on appeal, the appellants did not rely on page 57 of the Curl et al. article to establish that a colored benzene solution is evidence that macroscopic amounts of C<sub>60</sub> were produced. See 37 CFR § 41.52(a)(1) (2005). Rather, the appellants relied on pages 54 to 55 of the Curl et al. article to establish that “if less than macroscopic amounts were produced, no color would be seen.”<sup>3</sup> See Brief at 23. That portion of the Curl et al. article reads, in relevant part, as follows:

Thus, for five years, we had been searching for a method of producing visible amounts of the stuff. We called our efforts “the search for the yellow vial” because quantum calculations for such a soccerball-shaped carbon molecule suggested it would absorb light strongly only in the far violet part of the spectrum.

...

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<sup>3</sup> This portion of the Curl et al. article is the only portion relied on in the appeal brief.

In our laboratory we collected the sooty carbon produced by the vaporization laser while using various chemical techniques to detect the presence of C<sub>60</sub>. We slurried the soot in benzene, for example, and looked for a yellow color. But the solution in our test tubes stayed clear, with boring black soot sitting on the bottom. . . .

Many gave up hope of ever seeing the yellow vial. They reasoned that although the fullerenes may be stable, it was too hard to separate them from the other sooty material being produced in the vaporization experiments.

This passage does not establish that a macroscopic amount of C<sub>60</sub> is required to produce a colored benzene solution. See Decision at 9. Thus, the panel has not misapprehended the evidence on appeal.

The appellants also disagree with the panel's finding that the description of a colored product or colored powder in the specification does not establish possession of a macroscopic amount of C<sub>60</sub>. See Request at 7-8; Decision at 9-11.

A request for rehearing is not a vehicle to express disagreement with a decision on the merits. As explained above, a request for rehearing is entitled to consideration only to the extent it specifies with particularity the points believed to have been misapprehended or overlooked in rendering the final decision. See 37 CFR § 41.52(a)(1) (2005). Thus, to the extent that the appellants' disagreement with this finding does not specify any points believed to have been misapprehended or overlooked, the panel declines to reconsider it on rehearing.

In any event, the appellants do argue that the panel ignored the testimony of Dr. Kroto which is said to indicate that a colored powder conveys to one of ordinary skill in the art that macroscopic amounts of fullerenes were produced by the disclosed process. Request at 13.

Contrary to the appellants' arguments, the panel did not ignore the testimony of Dr. Kroto. See Decision at 14. Specifically, in paragraph 15 of the Supplemental Declaration dated November 16, 1999, Dr. Kroto states:

Example 1 [in the specification] describes [a] product . . . in the powder form as brownish-red. Such language connotes, in my opinion, that the product thereof could be seen with the naked eye. . . .

In response, this panel noted (Decision at 14):

[T]he fact that the product is in the form of a colored powder does not require the product to be macroscopic. As pointed out above, it is just as likely that the color of the powder was observed with the aid of a microscope as it is that the color of the powder was observed with the naked eye, especially since the original disclosure is silent as to whether the disclosed process produces a macroscopic amount of C<sub>60</sub>.

The appellants argue that (Request at 13):

By stating that it is "likely as not. . . .", the Board is indicating that it cannot meet its burden. The United States Patent and Trademark Office cannot show that it is more likely than not that the application does not reasonably convey at the time of filing to one of ordinary skill in the art that the inventors were in possession of a process of making macroscopic amounts of fullerenes, e.g., C<sub>60</sub>.

The appellants' argument is not persuasive. The issue under the written description requirement of 35 U.S.C. § 112, first paragraph, is whether the disclosure of appellants' application, as originally filed, is sufficiently clear that one of ordinary skill in the art would have recognized from the disclosure that appellants were in possession of a process for producing macroscopic amounts of C<sub>60</sub> at the time the application was filed. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991); In re Wertheim, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976); In re Ruschig, 379 F.2d 990, 996, 154 USPQ 118, 123

(CCPA 1967). In the final decision, the panel merely pointed out that a microscopic amount of C<sub>60</sub> can also be observed as a colored powder, albeit with the aid of a microscope. Thus, it is not sufficiently clear that a colored powder connotes a macroscopic amount of C<sub>60</sub>.

The appellants further argue that the panel summarily dismissed the inherency argument presented in the appeal brief. See Request at 14.<sup>4</sup> To the contrary, in the final decision the panel explained (Decision at 16-17):

Dr. Kroto testified that he prepared macroscopic amounts of C<sub>60</sub> on numerous occasions since 1990 using the procedure described in appellants' application. See Supplemental Declaration dated November 16, 1999, ¶¶ 17-19. To the extent that Dr. Kroto's testimony establishes that macroscopic amounts of C<sub>60</sub> can be produced by the disclosed process, this testimony is not persuasive on the issue of inherency. Significantly, appellants' specification establishes that microscopic amounts of C<sub>60</sub> can also be produced using the same process. See, e.g., Specification, p. 3, lines 12-14 (Figure 3 shows an infrared absorption spectrum of an approximately 2 micrometer thick coating of the 98% C<sub>60</sub>, 2% C<sub>70</sub> material on a silicon substrate); Specification, p. 3, lines 19-21 (Figure 4 shows a visible-ultraviolet absorption spectrum of an approximately 0.1 micrometer thick coating of the 98% C<sub>60</sub>, 2% C<sub>70</sub> material on quartz). Therefore, it cannot be said that the process described in appellants' originally filed application "inherently," i.e., inevitably or necessarily, produces "macroscopic" amounts of C<sub>60</sub>.<sup>7</sup>

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<sup>7</sup>We note that the test for determining compliance with the written description requirement of 35 U.S.C. § 112, first paragraph, is whether the disclosure of the application as originally filed would have reasonably conveyed to one of ordinary skill in the art that the inventor had possession of the later claimed subject matter. Vas-Cath, 935 F.2d at 1563, 19 USPQ2d at 1116. Significantly, Dr. Kroto does not mention whether he prepared macroscopic amounts of C<sub>60</sub> using a process within the scope of the appealed claims. See Supplemental Declaration dated November 16, 1999, ¶¶ 17-19.

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<sup>4</sup> With respect to the inherency argument, the appellants also repeat, practically verbatim, arguments presented in the appeal brief. Compare Request at 14 with Brief at 28-29. These arguments were fully addressed on pages 15 to 17 of the final decision. See 37 CFR § 41.52(a)(1) (2005) (a request for rehearing is limited to points believed to have been misapprehended or overlooked by the board).

However, the appellants argue that (Request at 12-13):

[T]he fact that samples were taken for measurements on such small quantities or that the crystals were described as microcrystalline does not necessarily imply that the process of the present invention produces macroscopic amounts of fullerenes, e.g., C<sub>60</sub>. As one skilled in the art is well aware, only minute amounts of material are required to obtain the spectra, but this fact, nevertheless, does not preclude the possibility that macroscopic amounts of material could have been produced by the method described in the present application. [Emphasis added.]

As explained in the prior decision, the issue under the written description requirement of 35 U.S.C. § 112, first paragraph, is not whether the process described in appellants' disclosure could have produced macroscopic amounts of C<sub>60</sub>. The issue is whether the appellants' original disclosure is sufficiently clear that one of ordinary skill in the art would have recognized from the disclosure that appellants were in possession of the later claimed process. Vas-Cath, 935 F.2d at 1563, 19 USPQ2d at 1116; Wertheim, 541 F.2d at 262, 191 USPQ at 96; Ruschig, 379 F.2d at 996, 154 USPQ at 123. Based on the record in this case, it is not sufficiently clear that the appellants were in possession of a process for producing macroscopic amounts of C<sub>60</sub> at the time the application was filed.

For the reasons set forth above, this panel declines to make any changes in the prior decision affirming the rejection of claims 45-49, 51-82, 96, 203 and 232 under 35 U.S.C. § 112, first paragraph, based on written description.

### III.

As for enablement, the appellants argue that the decision affirming the enablement rejection is based on an incorrect finding that the instant application does not provide descriptive support for a process of producing macroscopic amounts of C<sub>60</sub>. The appellants argue that the

enablement requirement is separate and distinct from the written description requirement of 35 U.S.C. § 112, first paragraph. Therefore, the appellants maintain that it was error for the panel to affirm the enablement rejection based on a lack of written description. Request at 16.

The panel is well aware that the enablement and written description requirements of 35 U.S.C. § 112, first paragraph, are separate and distinct. Vas-Cath, 935 F.2d at 1563, 19 USPQ2d at 1117. Indeed, this panel indicated that the appellants' specification must teach one of ordinary skill in the art how to make and use the full scope of the claimed invention without undue experimentation to satisfy the enablement requirement. In re Wright, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). The panel further explained that the appellants failed to show that the claims, which have a broader (or different) scope than the appellants' original disclosure, are enabled by that disclosure. See In re Moore, 439 F.2d 1232, 1236, 169 USPQ 236, 239 (CCPA 1971) ("The relevant inquiry [for enablement under 35 U.S.C. § 112, first paragraph,] may be summed up as being whether the scope of enablement provided to one of ordinary skill in the art by the disclosure is such as to be commensurate with the scope of protection sought by the claims."). See Decision at 19. Thus, it was not error to reject the claims under 35 U.S.C. § 112, first paragraph, based on enablement.

The appellants also argue that the panel misapprehended or overlooked paragraphs 8 and 15-19 of the Supplemental Declaration of Dr. Kroto dated November 16, 1999, in affirming the enablement rejection.<sup>5</sup> First, the appellants argue that Dr. Kroto indicated in the declaration that

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<sup>5</sup> The appellants also repeat arguments, practically verbatim, made on pages 31-33 of the appeal brief. See Request at 16-18. These arguments were fully addressed on pages 18-22 of the (continued...)

the process disclosed in the instant application enables the production of macroscopic amounts of C<sub>60</sub>. See Request at 18-19. Second, although the experiments described in the declaration were performed after the effective filing date of the instant application, the appellants argue that Dr. Kroto merely repeated the process described in the application to establish that the disclosure enabled the production of macroscopic amounts of C<sub>60</sub> as of the effective filing date of the application. See Request at 20-21.

According to Dr. Kroto:

[B]y following the procedure described in the above-identified application . . . we have isolated fullerenes in macroscopic amounts, as defined herein. For example . . . I have found that the smoky carbon product contains 5 to 10% C<sub>60</sub> and 1% C<sub>70</sub>. We routinely produce the soot in 1-5 gram quantities and routinely extract 100-500 milligram amounts batchwise. Thus, one kilogram of sooty carbon product produces, on average, 100g of C<sub>60</sub>. . . . The various fullerenes formed can and are isolated in accordance with the isolation and purification procedures described in the above-identified application, without an undue amount of experimentation.

Supplemental Declaration of Dr. Kroto dated November 16, 1999 at para. 18.

The process of claim 45 requires elemental carbon to be vaporized “under conditions effective to form a sooty carbon product comprising C<sub>60</sub> molecules” wherein the C<sub>60</sub> molecules are “present in said sooty carbon product in amounts capable of extracting therefrom said C<sub>60</sub> in macroscopic amounts.” See also claim 232 (process comprises “vaporizing elemental carbon . . . under conditions effective to form a sooty carbon product comprising C<sub>60</sub> molecules in macroscopic amounts”).

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<sup>5</sup>(...continued)  
final decision. See 37 CFR § 41.52(a)(1) (2005) (request for rehearing limited to points believed to have been misapprehended or overlooked by the Board).

According to Dr. Kroto, macroscopic amounts of C<sub>60</sub> were isolated from the sooty carbon product using the procedure described in the instant application. However, the specification of the instant application does not disclose the conditions under which elemental carbon must be vaporized to produce macroscopic amounts of C<sub>60</sub> molecules in the sooty carbon product. Moreover, Dr. Kroto does not identify those conditions, and the appellants have failed to establish that one of ordinary skill in the art could have determined the conditions without undue experimentation as of the effective filing date of the instant application. Wright, 999 F.2d at 1561, 27 USPQ2d at 1513. Thus, to the extent that it was “routine” after the effective filing date of the instant application to produce macroscopic amounts of C<sub>60</sub>, there is no evidence that it was “routine” as of the effective filing date of the instant application to produce macroscopic amounts of C<sub>60</sub> using the claimed process.

In the request for rehearing, the appellants also rely on evidence which was not discussed in the appeal brief to establish that the specification of the instant application enables the production of macroscopic amounts of C<sub>60</sub> using the claimed process. Specifically, the appellants rely on paragraphs 2 and 22 of the Supplemental Declaration of Dr. Kroto dated November 16, 1999, a 1990 Nature article by Kratschmer, and a Declaration of Dr. Loutfy dated July 16, 2002.

As explained above, evidence not previously relied on in the brief is not permitted in a request for rehearing. 37 CFR § 41.52(a)(1) (2005). Therefore, this evidence is not entitled to consideration on rehearing.

For the reasons set forth above, this panel declines to make any changes in the prior decision affirming the rejection of claims 45-49, 51-82, 96, 203 and 232 under 35 U.S.C. § 112, first paragraph, based on enablement.

III.

The appellants request clarification of the status of claims 45-49, 51-84, 96, 181 and 203-248 with respect to the rejection under 35 U.S.C. § 112, second paragraph. Request at 23.

As explained in the final decision (Decision at 4):

In the answer, the examiner indicates that the rejections based on “solid” and “discernible” are withdrawn. Answer, p. 3. Therefore, the rejection of claims 45, 181, 233, 234 and the claims dependent therefrom under 35 U.S.C. § 112, second paragraph, is considered withdrawn, and claims 83, 84 and 222 are the only claims which remain rejected under 35 U.S.C. § 112, second paragraph.

In the request, the appellants indicate that (Request at 23):

[I]t is Appellants understanding that there are no outstanding rejections of claims 204-221, 223-231, and claims 233-247. However, clarification is respectfully requested.

The appellants’ understanding is correct.

IV.

Finally, in a LETTER dated May 31, 2005, the appellants request an oral hearing to discuss the Declaration of Dr. Loutfy dated July 16, 2002, and its relevance to the rejections under 35 U.S.C. § 112, first paragraph, based on written description and enablement.

The appellants’ request is **DENIED**. First, the rules do not provide for an oral hearing on rehearing. See 37 CFR § 41.47 (2005) (effective September 13, 2004). Second, as explained above, evidence not previously relied on in the brief is not permitted in a request for rehearing.

37 CFR § 41.52(a)(1) (2005). Since the appellants did not rely on the Declaration of Dr. Loutfy in the appeal brief, it is not entitled to consideration on rehearing.

IV.

For the reasons set forth above, the appellants have failed to establish that this panel misapprehended or overlooked any points in rendering the Decision on Appeal dated March 30, 2005. Therefore, the request for rehearing is **DENIED**.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a) (2004).

**REQUEST FOR REHEARING - DENIED**

*Edward C. Kimlin*

EDWARD C. KIMLIN )  
Administrative Patent Judge )

*Bradley R. Garris* )  
BRADLEY R. GARRIS )  
Administrative Patent Judge )

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14

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